

# EXHIBIT 1



Bringing Nanoscience to Life

Company ▾ NanoBio® Protect NanoVax® Platform ▾ News ▾

## NanoBio® Protect Nasal Antiseptic Solution



NanoBio® Protect is an alcohol-free nasal antiseptic solution that can be used to help reduce germs on skin that can cause infections. The product is easy to apply with any cotton swab for use on the skin around the rim of your nose as well as the skin up to one-half inch inside each nostril. It is non-irritating, fragrance-free and leaves no residue after application.

NanoBio® Protect is an FDA regulated over-the-counter skin antiseptic that incorporates the active ingredient benzalkonium chloride (BZK), which has been used in humans as a topical skin antiseptic since the 1940's. NanoBio®

Protect is similar in concept to a hand sanitizer but is designed for use on the skin inside and around the nose where germs frequently enter the body.

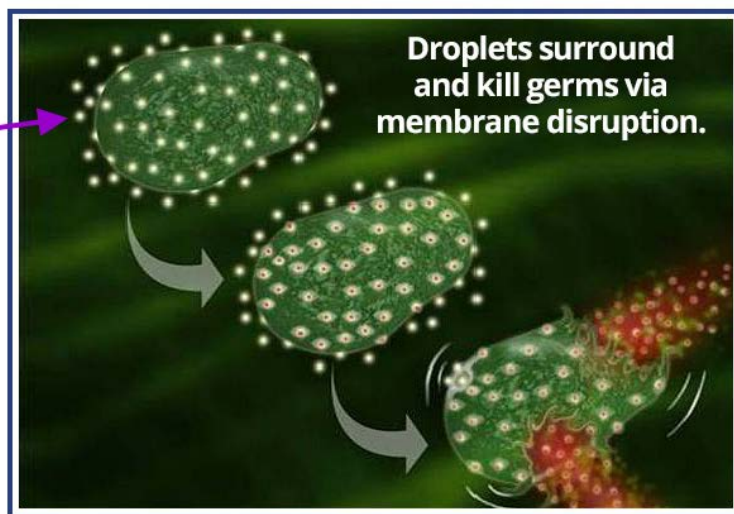
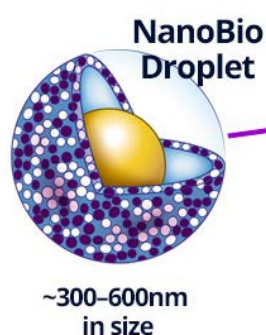


The unique effectiveness of NanoBio® Protect is derived from BlueWillow's patented nanotechnology.

NanoBio® Protect places the BZK antiseptic on the surface of nano-droplets, which results in at least four key advantages:

1. The nano-droplets are attracted to germs by electro-kinetic charge and present the BZK in such a way to enable killing of germs on contact,
2. The droplets persist on skin for 4 or more hours, enabling long-lasting effectiveness,
3. The droplets significantly hydrate skin to avoid dryness and cracking that can allow germs in.
4. And lastly, when bound to nano-droplets, BZK is non-irritating to the skin.

NanoBio® Protect kills germs via membrane disruption. NanoBio® Protect is comprised of positively charged droplets that are 300–600nm in size. The droplets are attracted to negatively charged germs in the skin. As shown to the right, the nano-droplets



physically disrupt the outer membrane of germs, killing on contact.

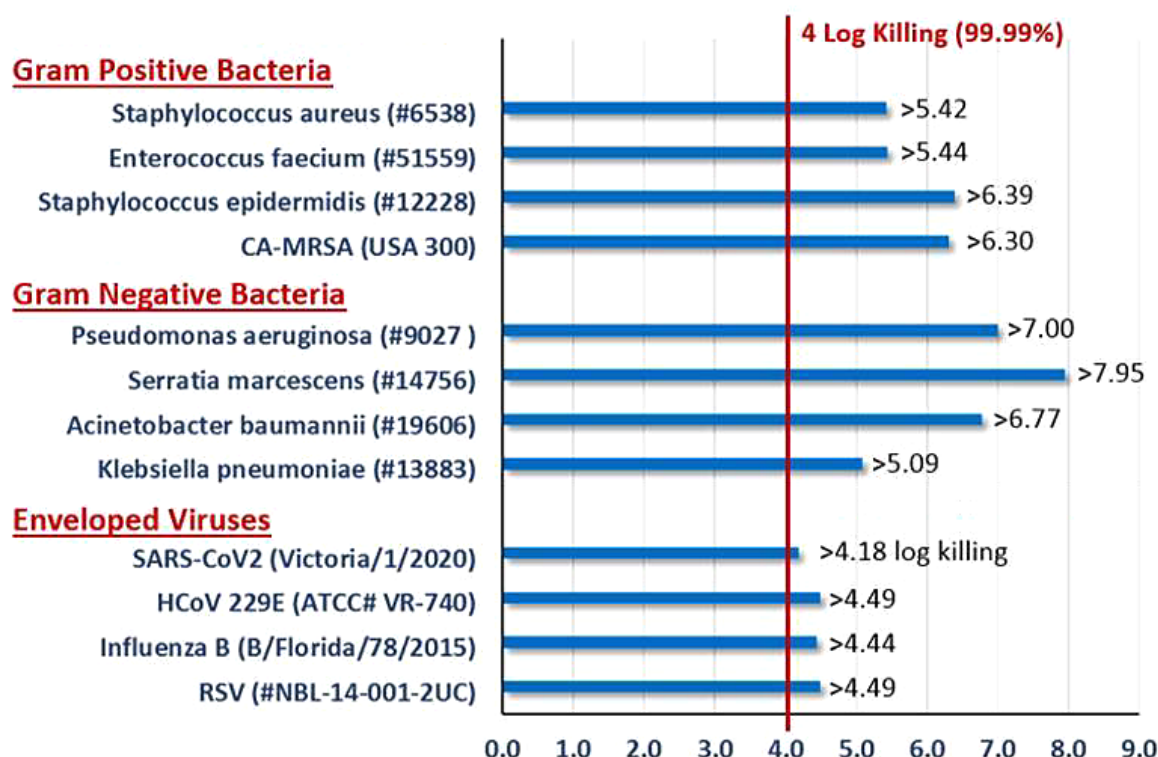
NanoBio® Protect is applied by thoroughly swabbing the skin up to one-half inch inside of each nostril and is recommended for use to help reduce germs on the skin in and around the nose that can cause infections. It should be used in conjunction with frequent handwashing, limited touching of the face, and social distancing to help minimize infection. Each 0.75 oz bottle of NanoBio® Protect will provide 40 or more treatments. A single application should involve the use of two swabs, including one for each nostril, or the use of a double-sided swab.

The product can be applied to the skin every 4–8 hours as needed, and is recommended for use during periods of increased risk of exposure to germs. For example, a healthcare worker might apply NanoBio® Protect two or more times a day. A flight attendant might apply the product 1–2 times during a long flight. Whereas, someone that is mostly staying at home in isolation may only need to apply it once a day or every few days prior to heading to the store or to an appointment.

## Scientific Research Behind NanoBio® Protect

BlueWillow's  
nasal  
antiseptic

has not  
been  
clinically  
tested to  
confirm  
protection  
against  
COVID-19  
infection in  
humans. It  
has



demonstrated both anti-bacterial and anti-viral activity in laboratory tests making it a potentially important additive measure to reduce the risk of infection

Standard *in vitro* lab experiments demonstrate that NanoBio® Protect kills more than 99.99% of germs within 60 seconds of exposure, as shown in the graph to the right.

Recent studies conducted by Public Health England also demonstrate NanoBio® Protect's ability to kill COVID-19 virus in laboratory tests. However, as stated above, studies to test for protection in humans have not yet been performed.

In addition, *ex vivo* tests in human skin (Figure A below) demonstrate that NanoBio® Protect persists on skin up to 7x better than commercial products and aqueous solutions containing the same BZK antiseptic agent. In vivo studies conducted in human volunteers (Figure B below) demonstrate that a single application of NanoBio® Protect significantly increases skin hydration for at least 3 hours, as compared to common hand sanitizer products:

Figure A

**Ex vivo levels of BZK (µg/g tissue) in human abdominal skin following one application**  
(dose of 100 µl/cm<sup>2</sup>, measured at 24 hours)

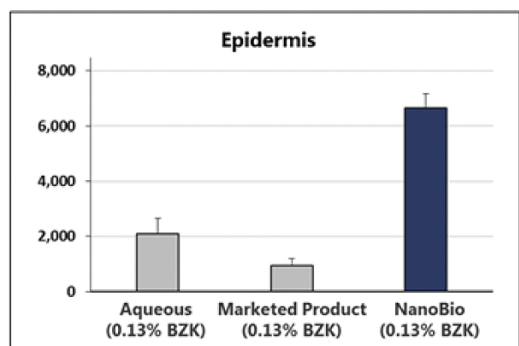
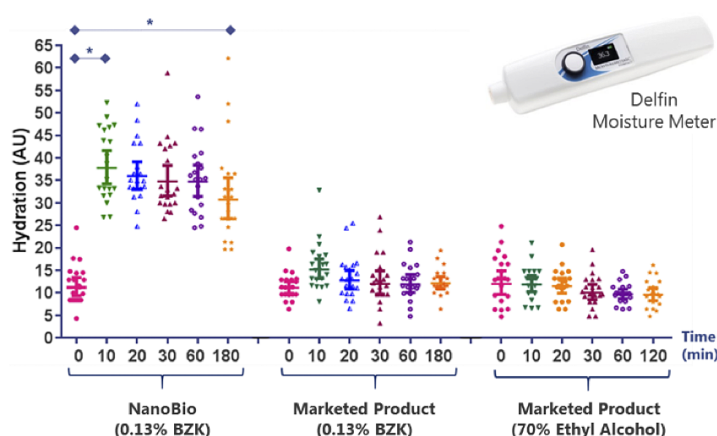


Figure B

**Measured following 1mL application to the arms of human volunteers**



## Safety

NanoBio® Protect and similar NanoBio® formulations have been tested extensively in animal and human studies involving topical application to skin. These studies demonstrate that topical NanoBio® products are non-irritating and are not absorbed systemically. The products are alcohol-free and are comprised of nanodroplets that have been optimized to provide significant advantages when used as topical antiseptic products, without being absorbed through the skin and into the bloodstream.

NanoBio® Protect's active ingredient is 0.13% benzalkonium chloride, which is regulated by the FDA as a skin antiseptic and has been used in humans for over 75 years. Unlike alcohol-based products, NanoBio® Protect does not irritate or dry out the skin, and instead provides a moisturizing and comforting experience. The product should be applied with any cotton swab to the skin around the nose and up to one-half inch inside of each nostril where germs frequently enter the body.

## Peer-Reviewed Scientific Publications

Other scientific publications describe the extensive research conducted with topical NanoBio formulations, as listed below:

- *"A Nanoemulsion as an Effective Treatment Against Human Pathogenic Fungi". Therapeutics and Prevention. 2019, Nov/Dec 4:6*
- *"Screening of Nanoemulsion Formulations and Identification of NB-201 as an Effective Topical Antimicrobial for Staphylococcus aureus in a Mouse Model of Infected Wounds". Military Medicine. 2016, May: 181, 5S:259-264*
- *"Nanoemulsion Therapy for Burn Wounds Is Effective as a Topical Antimicrobial Against Gram-Negative and Gram-Positive Bacteria". Burn Care Res. 2016, March /April: 37(2); 104-114*
- *"Treatment With a Novel Topical Nanoemulsion (NB-001) Speeds Time to Healing of Recurrent Cold Sores". Drugs Dermatol. 2012 Aug; 11(8):970-7*
- *"In Vitro Antibacterial Activity of NB-003 against Propionibacterium acnes". Antimicrobial Agents And Chemotherapy, Sept. 2011, Vol. 55, No. 9, p. 4211–4217*
- *"Topical Nanoemulsion Therapy Reduces Bacterial Wound Infection And Inflammation After Burn Injury". Surgery. 2010*
- *"NB-002, A Novel Nanoemulsion With Broad Antifungal Activity Against Dermatophytes, Other Filamentous Fungi, And Candida Albicans". Antimicrobial Agents And Chemotherapy, Aug. 2009, Vol. 53, No. 8, p. 3273–3279*
- *"In Vitro Activities of a Novel Nanoemulsion against Burkholderia and Other Multidrug-Resistant Cystic Fibrosis-Associated Bacterial Species". Antimicrobial Agents And Chemotherapy, Jan. 2009, Vol. 53, No. 1, p. 249–255*
- *"The Fungicidal Activity Of Novel Nanoemulsion (X8W60PC) Against Clinically Important Yeast And Filamentous Fungi". Mycopathologia 155: 195–201, 2001*
- *"A Novel Surfactant Nanoemulsion With A Unique Non-Irritant Topical Antimicrobial Activity Against Bacteria, Enveloped Viruses And Fungi". Microbiol. Res. (2001) 156, 1-7*
- *"Inactivation Of Ebola Virus With A Surfactant Nanoemulsion". Acta Tropica 87 (2003) 315/320*
- *"Antimicrobial Mechanism Of Action Of Surfactant Lipid Preparations In Enteric Gram-Negative Bacilli". Journal of Applied Microbiology 2000, 89, 397-403*
- *"Prevention of Murine Influenza A Virus Pneumonitis by Surfactant Nano-emulsions". Antiviral Chemistry & Chemotherapy, 2000, 11:41-49*
- *"A Novel Surfactant Nanoemulsion with Broad-Spectrum Sporicidal Activity Against Bacillus Species". The Journal of Infectious Diseases, 1999, 180:1939–49*

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